

# 2SC4543

Silicon NPN epitaxial planer type

For video amplifier

## Features

- High transition frequency  $f_T$ .
- Small collector output capacitance  $C_{ob}$ .
- Wide current range.

## Absolute Maximum Ratings (Ta=25°C)

| Parameter                    | Symbol         | Ratings    | Unit |
|------------------------------|----------------|------------|------|
| Collector to base voltage    | $V_{CBO}$      | 110        | V    |
| Collector to emitter voltage | $V_{CER}^{*1}$ | 100        | V    |
| Collector to emitter voltage | $V_{CEO}$      | 50         | V    |
| Emitter to base voltage      | $V_{EBO}$      | 3.5        | V    |
| Peak collector current       | $I_{CP}$       | 300        | mA   |
| Collector current            | $I_C$          | 150        | mA   |
| Collector power dissipation  | $P_C^{*2}$     | 1.0        | W    |
| Junction temperature         | $T_j$          | 150        | °C   |
| Storage temperature          | $T_{stg}$      | -55 ~ +150 | °C   |

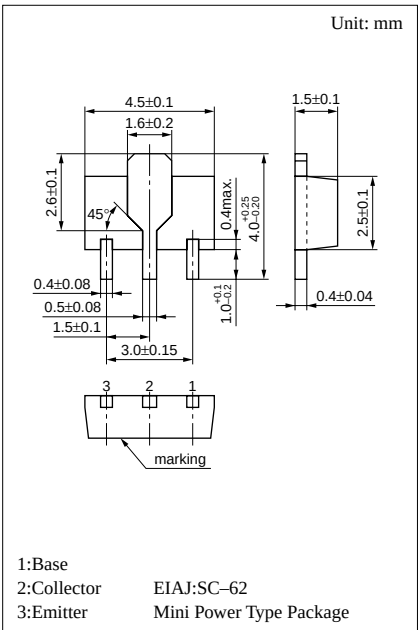
\*1  $R_{EB} = 1.2k\Omega$

\*2 Printed circuit board: Copper foil area of 1cm<sup>2</sup> or more, and the board thickness of 1.7mm for the collector portion

## Electrical Characteristics (Ta=25°C)

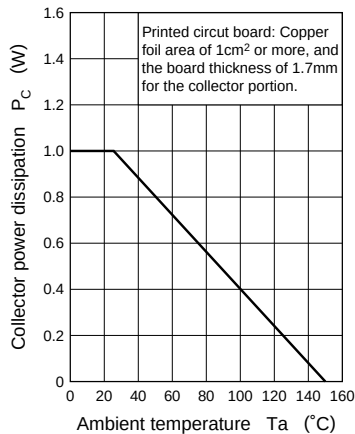
| Parameter                               | Symbol        | Conditions                                 | min | typ | max | Unit    |
|-----------------------------------------|---------------|--------------------------------------------|-----|-----|-----|---------|
| Collector cutoff current                | $I_{CEO}$     | $V_{CE} = 35V, I_B = 0$                    |     |     | 10  | $\mu A$ |
| Collector to base voltage               | $V_{CBO}$     | $I_C = 100\mu A, I_E = 0$                  | 110 |     |     | V       |
| Collector to emitter voltage            | $V_{CER}$     | $I_C = 500\mu A, R_{BE} = 470\Omega$       | 100 |     |     | V       |
|                                         | $V_{CEO}$     | $I_C = 1mA, I_B = 0$                       | 50  |     |     | V       |
| Emitter to base voltage                 | $V_{EBO}$     | $I_E = 100\mu A, I_C = 0$                  | 3.5 |     |     | V       |
| Forward current transfer ratio          | $h_{FE}$      | $V_{CE} = 5V, I_C = 100mA^*$               | 20  |     |     |         |
| Collector to emitter saturation voltage | $V_{CE(sat)}$ | $I_C = 150mA, I_B = 15mA^*$                |     |     | 0.5 | V       |
| Transition frequency                    | $f_{T1}$      | $V_{CB} = 10V, I_E = -10mA, f = 200MHz$    |     | 300 |     | MHz     |
|                                         | $f_{T2}$      | $V_{CB} = 10V, I_E = -110mA^*, f = 200MHz$ |     | 350 |     | MHz     |
| Collector output capacitance            | $C_{ob}$      | $V_{CB} = 30V, I_E = 0, f = 1MHz$          |     | 3   |     | pF      |

\* Pulse measurement

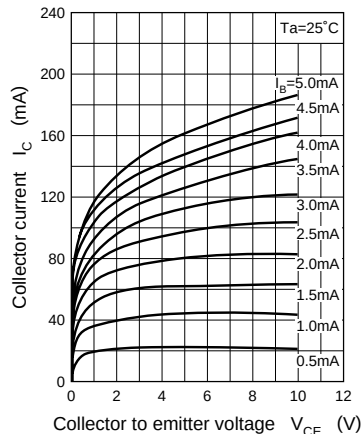


Marking symbol : 1F

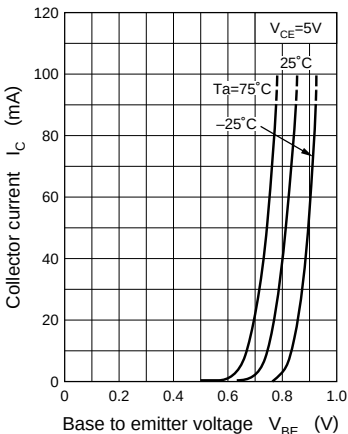
$P_C - T_a$



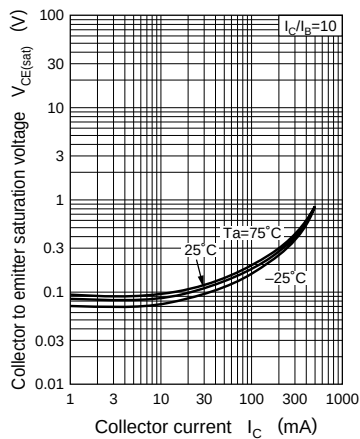
$I_C - V_{CE}$



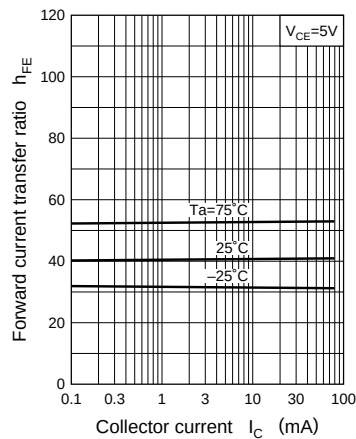
$I_C - V_{BE}$



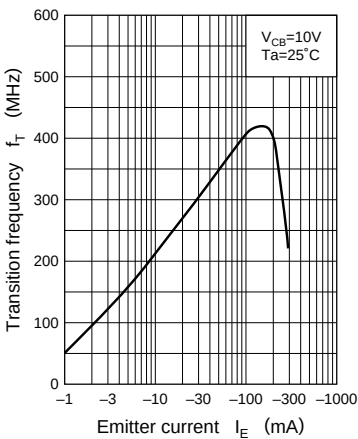
$V_{CE(sat)} - I_C$



$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$

